

I S Sadan

Subject Title: Chemistry II

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Unit - I: Inorganic Chemistry

1. What are oxides? How they classified ?
2. Explain the structures of oxides of Carbon & phosphorous .
3. What are inter halogens? Explain the structure of Icl_3 , IF_5 , IF_7 .
4. What are poly halides? Give a note of structures of Icl_2^- , Icl_4^- and I_3^- .
5. What are pseudo halogens? How they are differed from halogens.
6. What are clathrate compounds? Give examples.
7. Give a note on Halides of Xe .
8. Explain the structure of XeO_3 & XeO_4 .
9. Explain the structure of Oxyacids of Xe.
10. Give Electronic configurations of
a. Ruthenium b. Silver c. Platinum d. Gold
11. Explain the magnetic properties of Transition elements?
12. Explain the stability of various oxidation states in transition elements?
13. How 2nd and 3rd transition series differs with 3d series
14. Give a note on Cr & Cu traits?
15. Give a note on Ti traits?

UNIT-II. Organic chemistry

16. Explain SN_1 mechanism and its stereochemistry?
17. Give a note on energy profile diagram of SN_1 & SN_2 respectively?
18. Explain SN_2 reaction mechanism with stereochemistry?
19. Give a note on Racemisation and Walden inversion?
20. Give a note on ease of hydrolysis of Alkyl halides?
21. How RMgX is formed from Alkyl halides ? Give an examples
22. How 1^o, 2^o and 3^o alkyl halides are prepared ?

23. Explain the acidic nature of phenols ?
24. Give a mechanism of oppenauer oxidation ?
25. Explain following reaction mechanism
 - a. Reimer-Tiemer reaction
 - b. Kolbe electrolysis mechanism
26. Give a note on Electrophilic reaction mechanism in phenols
27. Give a note on following
 - a. Azo-coupling
 - b. Gattermann-koch mechanism
28. Give a note on willimson's synthesis?
29. How alcohols are prepared from Grignard reagent
30. How phenols are prepared from diazonium salts and cumene hydroperoxides ?
31. How carbonyl compounds are prepared from
 - A. Acid chlorides
 - B. 1,3- dithials
32. Give chemical reactions of
 - A. Cannizaro reaction
 - B. Hemi acetal and C. acetal formation
33. Give chemical reactions for reduction of carbonyl compounds, carboxylic acids and esters?

UNIT -3:(physical chemistry)Electrochemistry

34. Define the following
 - a. Specific conductance
 - b. Equivalent conductance
35. What is Migration of ions?
36. State and explain Kholraussch's law
37. Explain Arhenius theory of electrolysis dissociation
38. State and explain Ostwald's dilution law?
39. Explain debye-Huckel onsagar's equation for strong electrolytes?
40. What is Transport number? How it is determined by Hittorf's method ?
41. Give a note on degree if dissociation
42. Explain the construction of Galvanic cell
43. Explain the construction of Gas electrodes?
44. Explain the construction of standard hydrogen electrode ?
45. What are potentiometric titrations ?

UNIT-4 (General chemistry)

46. What are indicators? How are they selected?
47. What are titrations? Explain the types?
48. Explain the theories of indicators?
49. What are complexometric titrations? Give the structure of EBT, fast sulphon black & murexide indicators?
50. Explain the role of p^H in complexometric titrations?
51. How Ni^{2+} is determined by gravimetry?
52. Define a. wave length
b. Plane of polarized light
c. Optical rotation d. Specific rotation
53. Explain centre and S_n axis of symmetry with examples
54. D,L configuration with examples
55. R, S configurations with examples?
56. What are colligative properties
57. State and explain Raoult's law?
58. What is osmotic pressure? How it is determined?
59. What is Elevation in boiling point? How molecular weight can be calculated?
60. What is depression in freezing point?